

concentrated sulphuric acid, the mineral is decomposed very quickly as soon as the temperature is brought to the boiling point of sulphuric acid. The mass becomes a dry paste and dissolves in water. The solution is turbid from a quantity of basic phosphates, varying between two and eighteen per cent., according to the excess of acid present.

The acid solution may be boiled without the forming of a precipitate; thorium is therefore not contained in the mineral. Two determinations of the phosphoric acid gave 25.82 and 26.3 per cent., one being by phosphomolybdic acid; the other in the usual manner, after precipitating the bases first by oxalic acid, and the filtrate by ammoniac hydrate. Fluorine is not present.

The following is given as a preliminary result, pending the tedious separation of the oxides:

| | |
|---|--------------|
| (Ce, La, Dy, Y) ₂ O ₃ | = 73.82 |
| (Y, Fe, Ca) ₂ O ₃ | = 1.00 |
| P ₂ O ₅ | = 26.05 |
| Volatile by ignition | = 0.45 |
| | <hr/> 101.32 |

Supposing the oxides to be all cerous oxide, or in other words having the atomic weight of 92, the highest of the group, then the ratio obtains

$$P_2 O_5 : 3 Ce O = 1 : 3.75,$$

which is not reconcilable with a normal phosphate.

The speaker suggests, therefore, the possible presence in the group of a metal with a much higher atomic weight than cerium. He is engaged at work with a large enough quantity of the oxides to decide this question in time.

JANUARY 31.

The President, Dr. LEIDY, in the chair.

Eighteen persons present.

Messrs. Wilson Mitchell, Chas. H. Hutchinson, Rev. W. G. Holland, Able F. Price, Alfred C. Harrison and Robt. B. Haines were elected members.

Dr. A. Baltzer, of Zurich, and Prof. Robt. Collett, of Christiania, were elected correspondents.

The following were ordered to be published:—